

CLAIMS:

1. A dielectric barrier discharge lamp drive circuit including a sealed container having a dielectric body and
5 containing discharge gas, and a pair of electrodes, facing each other on the sealed container with the dielectric body and the discharge gas located therebetween, the dielectric barrier discharge drive circuit being characterized by:

10 a drive AC generation circuit for generating high frequency power applied between the pair of electrodes; and
a reactor member connected in series between the drive AC generation circuit and the discharge lamp.

2. The dielectric barrier discharge lamp drive
15 circuit according to claim 1, characterized in that the reactor member is an inductance element.

3. The dielectric barrier discharge lamp drive
circuit according to claim 1, characterized in that the
20 reactor member is a leakage transformer.

4. The dielectric barrier discharge lamp drive
circuit according to any one of claims 1 to 3, characterized
in that the drive AC generation circuit includes an inverter
25 for converting DC power to the high frequency power, the inverter including a means for adjusting the frequency of the high frequency power.

5. The dielectric barrier discharge lamp drive
30 circuit according to any one of claims 1 to 4, characterized in that the reactor member has an inductance value selected so that an impedance of a load as viewed from the drive AC generation circuit is set to a current limiting impedance

necessary for uniform light emission of the discharge lamp.

6. The dielectric barrier discharge lamp drive circuit according to any one of claims 1 to 4, characterized
5 in that a series resonance state is set by an inductance component of the reactor member and a load electrostatic capacity component of the discharge lamp, and the inductance component has an inductance value selected so that the frequency of the high frequency power is lower than the
10 resonance frequency.

7. The dielectric barrier discharge lamp drive circuit according to any one of claims 1 to 4, characterized in that a series resonance state is set by an inductance
15 component of the reactor member and a load electrostatic capacity component of the discharge lamp, and the inductance component has an inductance value selected so that the frequency of the high frequency power is positioned at a steep gradient part in a resonance impedance frequency
20 characteristic curve.

8. The dielectric barrier discharge lamp drive circuit according to any one of claims 1 to 4, characterized in that the impedance component has an inductance value
25 selected so that impedance of the reactor member cancels at least part of the impedance of the discharge lamp.

9. The dielectric barrier discharge lamp drive circuit according to claim 8, characterized in that a series
30 resonance state is set by an inductance component of the reactor member and a load electrostatic capacity component of the discharge lamp, and the inductance component has an inductance value selected so that the frequency of the high

frequency power of the drive AC generation circuit is set in the vicinity of the resonance frequency.

10. The dielectric barrier discharge lamp drive
5 circuit according to claim 8, characterized in that a series resonance state is set by an inductance component of the reactor member and a load electrostatic capacity component of the discharge lamp, and the inductance component has an inductance value selected so that the frequency of the high
10 frequency power of the drive AC generation circuit is lower than the resonance frequency.

11. The dielectric barrier discharge lamp drive circuit according to claim 1, characterized in that the
15 drive AC generation circuit includes a step-up transformer for boosting the high frequency power, and the reactor member is connected in series between the step-up transformer and the discharge lamp.

20 12. The dielectric barrier discharge lamp drive circuit according to claim 1, characterized in that the drive AC generation circuit includes a step-up transformer, having a primary coil and a secondary coil, for boosting the high frequency power, and the reactor member is connected in
25 series to the primary coil of the step-up transformer.